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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)	
0397-0479PUS1	

Application Number	Filed
10/826,612-Conf. #001186	April 19, 2004

First Named Inventor: Akihide SHIBATA et al.

Art Unit	Examiner
2818	T. T. V. Ho

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant /inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [ ] attorney or agent of record. Registration number _____
- [x] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. 29,271

Signature

Charles Gorenstein
Typed or printed name

(703) 205-8000
Telephone number

July 7, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

- [ ] *Total of 1 forms are submitted.

RWD
CG/RWD/kpc

Docket No.: 0397-0479PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Akihide SHIBATA et al.

Application No.: 10/826,612 Confirmation No.: 001186

Filed: April 19, 2004 Art Unit: 2818

For: SEMICONDUCTOR MEMORY DEVICE, SEMICONDUCTOR DEVICE, AND PORTABLE ELECTRONIC APPARATUS Examiner: T. T. V. Ho

REASONS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In addition to the Notice of Appeal which is being concurrently filed, Applicants respectfully request a Pre-Appeal Brief Conference to consider the issues raised in the Final Office Action dated February 8, 2006, that finally rejected claims 1-7, 12-20, and 25-30, as well as the Advisory Action dated April 27, 2006.

Rejection Under 35 U.S.C. § 103

The Examiner has rejected claims 1-7, 12-20, and 25-30 under the provisions of 35 U.S.C. § 103(a) as being unpatentable over U.S. Application Publication 20030005214 (Chan) in view of U.S. Patent 5,838,041 (Sakagami). The Applicants respectfully submit that claims 1-7, 12-20, and 25-30 are not obvious in view of the combination of Chan and Sakagami. For a Section 103 rejection to be proper, the cited references must teach or suggest each and every claimed element. See M.P.E.P. 2143.03. Thus, if the cited references fail to teach or suggest one or more elements, then the rejection is improper and must be withdrawn. The Applicants

respectfully submit that Chan and Sakagami, either alone or in combination, fail to disclose each and every claimed element of claims 1, 12, 13, and 14, as well as respective dependent claims.

Sakagami Fails to Disclose "memory function elements formed on both sides of the gate electrode and having a function for retaining charges"

In the Reply of April 6, 2006, Applicants explained that Sakagami shows a charge carrier injection region provided on the source side (referencing col. 6, lines 48 to 64), where a diffusion region 21 is a source in which an off-set region is provided (referencing col. 4, lines 13-14). Applicants explained that because of the arrangement in Sakagami, the first embodiment shown in Fig. 2 is provided with a single memory function unit that has a function of retaining charges. (Reply at page 3).

In an Advisory Action dated April 27, 2006, the Examiner had indicated that, "Sakagami, after disclosing that a charge carrier injection region is provided on the source side, teaches the same thing for the drain side (col. 7, lines 23+). Applicants agree. However, the claims require memory function units formed on "both" sides of the gate electrode and having a function for retaining charges. Applicants submit that Sakagami does not teach the arrangement recited in the present claims.

Sakagami's arrangement achieves a memory cell with no select transistors, i.e., reduction in size (paragraph bridging columns 2-3), as well as reduction in depth of the diffusion layer serving as a charge carrier injection electrode (col. 6, lines 40-47). Sakagami's arrangement can be formed with either the source or drain as an injecting electrode (col. 6, lines 30-34; col. 9, lines 42-44; see also Figs. 14 (source side) and 16 (drain side)), depending on which layer is formed with the off-set region (discussed throughout columns 5 and 6; particularly, col. 5, lines 46-60, and col. 6, lines 13-17).

In several example embodiments, Sakagami discloses arrangements in which a first diffusion layer 21 having an off-set region (distance D1) is provided under the left side wall 19 and a second diffusion layer 20 having an overlap region is provided under the right side wall 19 (see Figs. 2, 7, 8A and 8B). Sakagami states that in the memory cell, there is an off-set region under the charge carrier injecting layer (see column 10, lines 1-2). Thus, in example

embodiments the charge carrier injection region (i.e., memory function unit) is disclosed as being only in the left side wall 19 of the memory cell.

Furthermore, Fig. 14 of Sakagami shows a circuit diagram in which the first diffusion layer 21 and the second diffusion layer 20 are connected to SOURCE LINE and DRAIN LINE, respectively. In the alternative, Fig. 16 of Sakagami shows a circuit diagram in which the first diffusion layer 21 and the second diffusion layer 20 are connected to DRAIN LINE and SOURCE LINE, respectively. Thus, it can be seen that Figures 14 and 16 show that only the first and second diffusion layers 21 and 20 are respective to one of connected SOURCE LINE and DRAIN LINE.

Thus, as stated in the April 6, 2006 Reply, it can be seen that Sakagami fails to teach or suggest at least the claimed feature of "memory function units formed on both sides of the gate electrode and having a function for retaining charges," as recited in claims 1 and 12-14. This difference applies to respective dependent claims, as well.

At least for these reasons, Applicants request that the rejections be reconsidered and withdrawn.

Conclusion

Should the Examiner have any questions regarding this matter, she is respectfully requested to contact Robert W. Downs (Reg. No. 48,222), who may be reached in the Washington, DC, area at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: July 7, 2006

Respectfully submitted,

By _____
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